

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/881,089
Attorney Docket No. Q64816

IN THE CLAIMS:

The claims are amended as follows:

1. (currently amended): A stator for an alternator comprising:

a stator core fixed to a case and facing a rotor, and formed in a circumferential direction with a number of radially extending slots of a rectangular cross section; and

a stator coil installed in said slots of said stator core,

wherein said stator coil is formed into a predetermined shape prior to installation in said slots; and

said stator coil comprising wire-shaped conductors wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction within said slots at intervals of a predetermined number of slots,

said conductors comprising:

straight portions disposed within said slots of said stator core,

a plurality of turn portions ~~said conductors being bent back outside said~~ slots at axial end surfaces of said stator core ~~to form a plurality of turn portions,~~ said plurality of turn portions being bent back in a similar shape inclined with respect to an outer circumferential surface of the stator core and so as to align in rows in a circumferential direction and form coil end groups, and;

end portions being bent outside said slots at an axial end surface of said stator core, said end portions comprising a portion that is inclined with respect to an outer

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circumferential surface of the stator core so as to align in rows in a circumferential direction and form coil end groups,

wherein:

a cross-section of at least a principal portion of said straight portion of said stator coil inside said slots is approximately rectangular,

a cross-section of at least a portion including said plurality of turn portions and said end portions of said coil ~~end~~ is approximately circular or approximately elliptic, ~~and~~

a cross-sectional area of said approximately rectangular cross-sectional portion differs from that of said approximately circular cross-sectional portion or said approximately elliptic cross-sectional portion.

2. (currently amended): The A stator for an alternator according to Claim 1
wherein:

a cross section of said conductors comprising said plurality of turn portions and said end portions ~~coil ends~~ is approximately circular or approximately elliptic throughout a substantial entirety of said conductors.

3. (currently amended) The A stator for an alternator according to Claim 1 wherein:

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a cross-sectional area of said conductors inside said slots is larger than a cross-sectional area of said conductors comprising said coil ends.

4. (currently amended): The A stator for an alternator according to Claim 1
wherein:

said wire-shaped conductors of said stator coil ~~comprise~~ comprises a plurality of U-shaped conductor segments, end portions thereof being joined to each other, and a cross section of at least a portion including ~~ends of said end~~ turn portions of said U-shaped conductor segments is approximately circular or approximately elliptic,

said end portions being bent outside said slots at an axial end surface of said stator core,
said end portions comprising a portion that is inclined with respect to an outer circumferential
surface of said stator core and a portion that is perpendicular to said outer circumferential surface
of said stator core so as to align in rows in a circumferential direction and form coil end groups,
and

said straight portions of said end portions are joined to each other.

5. (currently amended): The A stator for an alternator according to Claim 4
wherein:

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a cross section of said end portions of said U-shaped conductor segments is approximately circular or approximately elliptic.

6. (currently amended): The A stator for an alternator according to Claim 1 wherein:

said wire-shaped conductors of said stator coil comprise ~~comprises~~ a continuous conductor wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction within said slots at intervals of a predetermined number of slots,

said continuous conductor comprising a plurality of turn portions being bent back outside said slots at both sides of said stator core, and

each successive one of said plurality of turn portions of said continuous conductor being disposed on alternating sides of said stator core.

7. (currently amended): The A stator for an alternator according to Claim 1 wherein:

a plurality of said conductors are disposed in a radial direction of said slots, and a cross section of said conductors in said slots is an approximately rectangular shape having long sides in a radial direction.

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8. (currently amended): The A stator for an alternator according to Claim 1
wherein:

said conductors comprise four (4) or more layers in said slots, and said stator coil
comprises two (2) or more rows of coil end groups.

9. (currently amended): A stator for an alternator comprising:
a stator core fixed to a case and facing a rotor, and formed in a circumferential direction
with a number of radially extending slots of a rectangular cross section; and
a stator coil installed in said slots of said stator core,
wherein said stator coil is formed into a predetermined shape prior to installation in said
slots; and
said stator coil comprising wire-shaped conductors wound so as to alternately occupy an
inner layer and an outer layer in a slot depth direction within said slots at intervals of a
predetermined number of slots,
said conductors being bent back outside said slots at axial end surfaces of said
stator core to form a plurality of turn portions,
said plurality of turn portions being bent back in a similar shape inclined with
respect to an outer circumferential surface of the stator core and so as to align in rows in a
circumferential direction and form coil end groups, and,

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a cross-section of at least a principal portion of said stator coil inside said slots is approximately rectangular,

a cross-section of at least a portion including end portions of said coil end is approximately circular or approximately elliptic, and

a cross-sectional area of said approximately rectangular cross-sectional portion differs from that of said approximately circular cross-sectional portion or said approximately elliptic cross-sectional portion,

~~A stator for an alternator according to Claim 1 wherein:~~

wherein a hardness of said conductors of said coil ends is less than that of said conductors in said slots.

10. (currently amended): The A stator for an alternator according to Claim 1
wherein:

said rotor further comprises a air-cooling fan being rotationally driven together with said rotor.

11. (currently amended): The A stator for an alternator according to Claim 1
wherein:

a varnish or resin is applied to said coil end groups.

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12. (currently amended): The A stator for an alternator according to Claim 1
wherein:

portions corresponding to coil ends in said conductors of an approximately rectangular cross section throughout are pressed and made to an approximately circular cross section or approximately elliptic cross section.

13. (currently amended): The A stator for an alternator according to Claim 1
wherein:

portions of said conductors of an approximately circular cross section throughout installed in said slots are pressed and made to an approximately rectangular cross section.

14. (currently amended): The A stator for an alternator according to Claim 13
wherein:

portions of said conductors installed in said slots are pressed so as to make a cross-sectional area thereof larger than a cross-sectional area of said conductors of said coil ends.

15. (currently amended): The A stator for an alternator according to Claim 13
wherein:

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portions of said conductors of an approximately circular cross section throughout are installed in said slots and pressed to an approximately rectangular cross section.

16. (currently amended): The A stator for an alternator according to Claim 13 wherein:

only portions of said conductors of an approximately circular cross section throughout installed in said slots are changed to a wave shape, after which said wave shape portion is pressed to an approximately rectangular cross section.

17. (currently amended): The A stator for an alternator according to Claim 13 wherein:

portions of said conductors of an approximately circular cross section throughout installed in said slots are changed into a shape of large cross section and then pressed to an approximately rectangular cross section.

Claims 18-24 (withdrawn).